ELEC 694 / COMP 694 – SPRING 2013

Future Personal Computing Technologies Seminar

Next Class – Semester Finished
9:30 – 11:00 – DH 2014

Readings for next Class –

Lectures

1) **01/09/13** **Introduction (.PPTX) (.PDF)** *(Cutler)*
2) **01/16/13** **Technology Acceleration and Disruptive Technologies (.PPTX) (.PDF)** *(Cutler)*
3) **01/23/13** ***Intro*** **(.PPTX)(.PDF)** *(Cutler)*, **Creating and Delivering Great Presentations (.PPSX)** *(Tracy Volz)*
4) **01/30/13** ***Intro*** **(.PPTX)(.PDF)** *(Cutler)*, **Consumer Medical Devices** *(Ahmed Haque)*
5) **02/06/13** ***Intro*** **(.PPTX)(.PDF)** *(Cutler)*, **Identity Theft / Phishing** *(Enoch Chang)*
6) **02/13/13** ***Intro*** **(.PPTX)(.PDF)** *(Cutler)*, **Internet of Things** *(Ryan Artecona)*
   02/20/13 No Class – family emergency
   02/27/13 No Class - Rice midterm recess
7) **03/06/13** ***Intro*** **(.PPTX)(.PDF)** *(Cutler)*, **Storage** *(Jianbo Chen)*
   03/13/13 No Class – family emergency
8) **03/20/13** ***Intro*** **(.PPTX)(.PDF)** *(Cutler)*, **HTML 5** *(Zhiyong Tan)*
9) **03/27/13** ***Intro*** **(.PPTX)(.PDF)** *(Cutler)*, **Internet Video** *(Rob Bauer)*
10) **04/03/13** ***Intro*** **(.PPTX)(.PDF)** *(Cutler)*, **Ecosystems Group Discussion** *(All - teams)*
11) **04/10/13** ***Intro*** **(.PPTX)(.PDF)** *(Cutler)*, **Topics not chosen** *(Cutler)* / **Prep for Group Presentation** *(All)*
12) **04/17/13** ***Intro*** **(.PPTX)(.PDF)** *(Cutler)*, **Group Presentations** *(All - teams)*
    04/21/13? Possible Off-Site 12:00 – 4:00 *(Optional)*

Prep Schedule

Date	Class	Topic#	Topic Name	Presenter			
					Volz	Final Draft	S
12/26/2012							
1/2/2013							
1/9/2013	1		Introduction and Technology Acceleration	Cutler			
1/16/2013	2		Disruptive Technologies	Cutler			
1/23/2013	3		Creating and Giving Great Presentations	Volz	Haque	Haque	
1/30/2013	4	1	Consumer Medical Devices	Haque	Chang	Chang	
2/6/2013	5	2	Identity Theft / Phishing	Chang	Artecona	Artecona	
2/13/2013	6	3	Internet of Things	Artecona	Chen	Chen	
2/20/2013			*No Class – Family Emergency*				
2/27/2013			*No Class - Spring Break*				
3/6/2013	7	4	Storage	Chen	Tan	Tan	

3/13/2013			*No Class – Family Emergency*				
3/20/2013	8	5	HTML 5	Tan	Bauer	Bauer	
3/27/2013	9		Group Discussion	All			
4/3/2013	10	6	Internet Video	Bauer			
4/10/2013	11		Topics Not Chosen / Prep for Group Projects	Cutler / All			
4/17/2013	12		Final Group Projects	All			
4/21/2013			Tentative date for Off-Site (Optional)				

Instructor

Scott Cutler, cutler@rice.edu, DH 2063, 713 348-2526
Office hours: Student meetings typically Wednesdays (also Tuesdays and Thursdays when needed),

Course Information

Class: Wednesday 9:30 – 11:00, Duncan Hall 2014
Web: www.ece.rice.edu/Courses/694.html

Course Description

This class will explore the trends in the major building blocks and standards driving the personal computer, mobile devices and personal digital electronics industries. The course will start with a couple of lectures on the waves of computing, disruptive technologies and a rough prediction of personal electronics futures based on extrapolation from the past 5 years. The third seminar will cover how to create and deliver great presentations.

The next series of seminars will cover a set of important building blocks or standards in greater depth – one for each student in the class. In addition to a brief history, technology directions, growth drivers and new standards will be covered. These sessions will be student led.

Students will have at least five weeks to study a technology and prepare the presentation. There will be five 1-on-1 topic meetings with each student prior to actual seminar presentation. The first, held approximately five weeks before the seminar will be to determine the basic concepts to be covered. The second meeting, held four weeks prior to the presentation, reviews the technical areas being research as well as the presentation outline with suggested slide titles and presentation flow. The third and fourth meetings, held three and two weeks before the seminar, will review initial and second draft seminar presentations. The fifth meeting, held one week prior to the seminar will review a final draft of the presentation.

Engineering Communications Project Review

You will have a sixth 1 on 1 meeting with Dr. Tracy Volz (tmvolz@rice.edu) formerly of the Cain Project and now in the Dean's office to help you develop your presentation visuals and improve your presentation skills. Please email Dr. Volz (tmvolz@rice.edu) two weeks before your seminar to schedule your presentation review session. Email the final draft of your slides to Dr. Volz one week prior to your presentation in class. The review meeting should take place the Friday

before you are scheduled to give your presentation to the class. You must have your entire presentation ready to rehearse at your appointment. The practice session will take about 1.5 hours.

Final Presentations and Paper

The course will conclude with a final project and paper.

The final paper will be due on the last class. Students will author white papers on one of the covered subjects in greater depth than in the classroom with particular attention being paid to the future impact of the selected technology and how it will be impacted or will impact another technology also on a growth trajectory. The white papers can utilize the same topic as the student presented or a different one if desired.

The final presentation will be a series of student led predictions of the personal computing landscape 5 years out by assessing the implication of combinations of technological advances and reasonable judgments as to the expectations for the individual technologies. These will be presented over the final two seminar periods.

Candidate (topics in Italics have already been selected by one of the students for this year)

Topics selected by students *(Three students have volunteered to start during the winter break so they are ready for the first student led seminars).*

- ***Consumer Medical Electronics.*** *(Ahmed Haque 1/30/13)*
- **Identity Theft / Phishing** *(Enoch Chang 2/06/13)*
- **Internet of Things.** *(Ryan Artecona 2/13/13)*
- **Storage** *(Jianbo Chen 2/20/13)*
- **HTML 5** *(Zhiyong Tan 3/06/13)*
- **Internet Video** *(Rob Bauer 3/13/13)*

Preferred Topics

- **Advanced Computer Inputs – Kinect, Touch Screens**
- **ARM vs. x86 for mainstream usage and/or Intel vs. NVIDIA**
- **Automotive Electronics beyond the engine including GPS, XM audio, XM data, cellular data**
- **Cloud Computing**
- **Consumer Medical Devices / Electronic Medical Records (consumer)**
- **Digital Living Room - AirPlay and dLNA, networked receivers**
- **HTML 5**
- **Identity theft / phishing**
- **Intellectual Property, patent trolls, law suits, DRM for movies / TV ad revenue model**
- **Internet of things, Embedded cellular data modems, Ultra low powered computing**
- **Internet Video / Netflix / Google TV, Apple TV, repurposed game machines**
- **Main Stream Processors and Chipsets / Parallel, multi-core technology for consumer uses**
- **NFC and Mobile Payments**
- **Shared Metered 4G LTE Data Plans**
- **Social Media – specifically Facebook long term or quick rise/fall or Twitter business model**
- **Storage – SATA, Solid State Drives, Flash, RAID, Backup, disk in the clouds**
- **Voice Recognition Assistants**
- **Windows 8 / 8RT**

Prerequisites

None – Seminar for seniors and graduate students as well as juniors with a strong interest in personal electronics and related technologies.

Discussions

While each student will be responsible for one main presentation, all students are expected to actively engage in the discussion of the topics. You are the audience for all presentations except for the one you give. Presenters may request that the rest of the class read a short paper or two on their selected topic.

Grading

70% Individual topic presentation (content and delivery including the result of the Cain Project evaluation)
10% Discussion Participation
10% Final Presentation
10% Final Paper

Students with Disabilities

Any student with a documented disability seeking academic adjustments or accommodations is requested to speak with me during the first two weeks of class. All discussions will remain as confidential as possible. Students with disabilities will need to also contact Disability Support Services in the Ley Student Center.